WHAT IS CLAIMED IS:

1. A recombinant expression vector comprising a heterologous promoter operably linked to an expressed polynucleotide which naturally encodes an Afc1 polypeptide, wherein said polypeptide mediates the proteolytic removal of an AAX tripeptide from a prenylated CAAX protein.

2. A vector according to claim 1, wherein the polynucleotide comprises SEQ ID NO:1.

3. A vector according to claim 1, wherein the polypeptide comprises SEQ ID NO:2.

4. An isolated polynucleotide comprising SEQ ID NO:6 hybridized to an Afc1 transcript.

5. A recombinant expression vector comprising a promoter operably linked to an expressed polynucleotide which naturally encodes an Rce1 polypeptide, wherein said polypeptide mediates the proteolytic removal of an AAX tripeptide from a prenylated CAAX protein.

6. A vector according to claim 5, wherein the polynucleotide comprises SEQ ID NO:3.

7. A vector according to claim 5, wherein the polypeptide comprises SEQ ID NO:4.

8. An isolated polynucleotide comprising SEQ ID NO:5 hybridized to an Rce1 transcript.

9. A recombinant cell transduced with the vector of claim 1.

10. A recombinant cell transduced with the polynucleotide of claim 4.

11. A recombinant cell transduced with the vector of claim 5.

12. A recombinant cell transduced with the polynucleotide of claim 8.

13. A method for making a polynucleotide according to claim 4, the method comprising the step of hybridizing a polynucleotide comprising SEQ ID NO:6 with an Afc1 transcript to form a polynucleotide according to claim 4.

14. A method for making a polynucleotide according to claim 8, the method comprising the step of hybridizing a polynucleotide comprising SEQ ID NO:5 with an RCE1 transcript to form a polynucleotide according to claim 8.

15. A method of identifying a compound which inhibits the proteolytic removal of an AAX tripeptide of a CAAX protein in a cell, the method comprising steps:

contacting a sample comprising a recombinant cell according to claim 9, or lysate thereof with a test compound; and

measuring activity or expression of the Afc1p or Rce1p expressed by the cell, wherein compound-dependent inhibition of the activity or expression indicates that the compound inhibits the proteolytic removal of the AAX tripeptide.

16. A method of identifying a compound which inhibits the proteolytic removal of an AAX tripeptide of a CAAX protein in a cell, the method comprising steps:

contacting a sample comprising a recombinant cell according to claim 10, or lysate thereof with a test compound; and

measuring activity or expression of the Afc1p or Rce1p expressed by the cell, wherein compound-dependent inhibition of the activity or expression indicates that the compound inhibits the proteolytic removal of the AAX tripeptide.

17. A method of identifying a compound which inhibits the proteolytic removal of an AAX tripeptide of a CAAX protein in a cell, the method comprising steps:

contacting a sample comprising a recombinant cell according to claim 11, or lysate thereof with a test compound; and

measuring activity or expression of the Afc1p or Rce1p expressed by the cell, wherein compound-dependent inhibition of the activity or expression indicates that the compound inhibits the proteolytic removal of the AAX tripeptide.

18. A method of identifying a compound which inhibits the proteolytic removal of an AAX tripeptide of a CAAX protein in a cell, the method comprising steps:

contacting a sample comprising a recombinant cell according to claim 12, or lysate thereof with a test compound; and

measuring activity or expression of the Afc1p or Rce1p expressed by the cell, wherein compound-dependent inhibition of the activity or expression indicates that the compound inhibits the proteolytic removal of the AAX tripeptide.

19. A method of identifying a compound which inhibits Rce1p activity or Afc1p activity, the method comprising steps:

expressing from a polynucleotide according to claim 4 an Afc1 or Rce1 polypeptide;

isolating the polypeptide;

contacting a test compound to a sample comprising the isolated polypeptide; and

measuring an activity selected from the group consisting of Afc1p activity, Rce1p activity, Afc1p expression, and Rce1p expression,

wherein compound-dependent inhibition of the activity indicates that the compound inhibits Rce1p activity or Afc1p activity.

20. A method of identifying a compound which inhibits Rce1p activity or Afc1p activity, the method comprising steps:

expressing from a polynucleotide according to claim 8 an Afc1 or Rce1 polypeptide;

isolating the polypeptide;

contacting a test compound to a sample comprising the isolated polypeptide; and

measuring an activity selected from the group consisting of Afc1p activity, Rce1p activity, Afc1p expression, and Rce1p expression,

wherein compound-dependent inhibition of the activity indicates that the compound inhibits Rce1p activity or Afc1p activity.